

## II

# DEMONSTRATION OF VARIOUS FLOCCULATION TESTS FOR SYPHILIS\*

By Dr. T. E. OSMOND

MR. PRESIDENT, LADIES AND GENTLEMEN,

I propose to be as brief as possible, confining myself to a short description of each of the tests which I hope to demonstrate this evening.

(1) The *Kline* test is carried out in a chamber formed by a ring of paraffin on a glass slide. Antigen and serum (or C.S. fluid) are mixed in suitable proportions, and the slide is shaken for a few minutes by rotation on a flat surface. The result is read immediately under the low power of a microscope; definite precipitation indicates a positive result.

This test is applicable to both heated and unheated serum and to C.S. fluid. Where time is short, defibrinated finger blood may be employed.

The extract employed is a highly purified one, containing the *alcohol soluble acetone insoluble* constituents of dried heart powder. Various antigens are made from this extract, according to the type of test to be carried out; all contain relatively large amounts of cholesterin.

We are only concerned here with the *diagnostic* test on *heated* serum, which has given highly satisfactory results in the laboratory at the V.D. Clinic, St. Thomas's Hospital.

Comparisons with other tests are as follows:—

*Kline and W.R. (No. 1).*

Agreements	. 349	
Rel. agreements	127	in 88 Kline was the more sensitive.
Disagreements	. 10	9 in favour of Kline; 1 undecided.
Total.	. 486	

\* Based on a paper read before the M.S.S.V.D., March, 27th, 1931.

## FLOCCULATION TESTS FOR SYPHILIS

### *Kline and Kahn.*

Agreements	. 100	
Rel. agreements	59	32 in favour of Kline ; 21 in favour of Kahn.
Disagreements	5	1 in favour of Kline ; 4 undecided.
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Total	. 164	
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### *Kline and Sigma.*

Agreements	. 79	
Rel. agreements	48	31 in favour of Kline ; 14 in favour of Sigma.
Disagreements	4	all in favour of Kline.
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Total	. 131	
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### *Kline and M.B.R. II.*

Agreements	. 101	
Rel. agreements	19	
Disagreements	3	2 in favour of Kline ; 1 in favour of M.B.R.
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Total	. 123	
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From the above it will be seen that the Kline test is at least as sensitive as any of the other tests, and much more so than most. Moreover, it appears to be highly specific, since we have only met *one* apparently false positive result in 850 tests. The test is extremely simple, quick to carry out, and easy to read with a little experience. In the case of C.S. fluid, it is not so satisfactory, since it will only work with fluids which give the Benedict's test ; that is to say, that fluids turbid with exudate blood or bacteria are unsuitable for testing.

(2) The *Müller Conglomeration Reaction* (M.B.R. II.) is carried out by mixing serum with a colloidal antigen and heating. The latter is made from a cholesterinised concentrated alcoholic extract by diluting it with alkaline saline according to certain rules. Positive results are indicated by a very definite conglomeration within a few hours. A more speedy result may be obtained by centrifugation, or, on the other hand, tests may be put up overnight and read the following morning. This test is peculiar in the presentation of conglomeration or balling of the precipitate in the centre of the fluid column, and the results compare favourably both in sensitiveness and specificity with other tests. It appears to work well with C.S. fluids.

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(3) The *Meinicke Clarification Reaction* (M.K.R.) depends upon the clearing of an opaque mixture of serum and antigen in positive cases. The antigen is essentially an extract of heart (with balsam of Tolu added) diluted with alkaline saline. Sera are used *unheated*.

The two ingredients are mixed in suitable proportions and allowed to stand for 16 to 20 hours at 20° C. ; this latter is the principal objection to the test, since it necessitates the use of a special incubator. Moreover, a room temperature of 20° C. is desirable when putting up the test, and this is not always easy to obtain.

In my hands the test has proved quite reliable and rather more sensitive than the W.R. in treated cases.

In a series of about 100 tests it showed no absolute disagreements with the W.R. On the other hand, it did not appear to be quite so sensitive as the Kahn or Sigma reactions.

A rapid micro-reaction is also described.

(4) *The Hinton test* employs two separate extracts, one made from ordinary muscle and one from heart. Both are made up with cholesterin, 50 per cent. glycerine and saline. Heated serum is mixed with each of the two extracts, and the tests incubated at 37° C. for 16 hours.

The reading of the results depends on clearing with or without the formation of clumps in the case of the muscle indicator and on the formation of a ring with, in addition, in certain cases, more or less clearing and the formation of agglutinated masses or a precipitate with the heart indicator. No change or merely a slight granularity indicates a negative result.

This test is rather troublesome to set up, and the results are not always easy to read. Moreover, the tubes must be kept quite still in a water bath until ready to be read, so that it is not possible to demonstrate the results here to-night.

Dr. L. W. CANN also gave an address. The views which he expressed are published in a separate article in this issue in a paper by himself and Dr. S. De Navasquez.